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IS 5365 (1991): Core Drills, Parallel Shanks [PGD 32: Cutting tools]



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भारतीय मानक
क्रोड बरमा, समानान्तर शैक — विशिष्ट
(दूसरा पुनरीक्षण)

Indian Standard
CORE DRILLS, PARALLEL SHANKS —
SPECIFICATION
(*Second Revision*)

UDC 621.951.456

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

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Price Group 3

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Drills and Reamers Sectional Committee had been approved by the Production Engineering Division Council.

This standard was first published in 1969. First Revision was issued in 1978 to bring it in line with ISO 235/2-75. This second revision has been brought out incorporating the revision of ISO 235/2-75 as ISO 7079-1981, covering diameter range of core drill up to 20 mm.

These drills are meant for drilling pre-drilled holes especially on castings. The following are the modifications made in this revision:

- a) Tolerance on flute length ' L_1 ' and overall length ' L ' deleted from the table and added with example at 3.1 and 3.1.1 for uniform and easier application of this standard.
- b) Material and hardness added.
- c) Table modified, position of Range of Diameter ' d ' changed and brought after choice of the diameters ' d ' h8.
- d) The range of diameter of core drills covered increased. Earlier specification covered diameters up to 16.00 mm only whereas this specification covers range of diameters up to 20.00 mm.

In the preparation of this standard assistance has been derived from ISO 7079-1981 'Core drills with parallel shanks and with morse taper shanks', issued by International Organization for Standardization (ISO).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (revised)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

CORE DRILLS, PARALLEL SHANKS — SPECIFICATION

(Second Revision)

1 SCOPE

This standard covers the dimensions and other requirements for core drills with parallel shanks.

2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard:

IS No.	Title
5099 : 1983	Technical supply conditions for twist drills (<i>first revision</i>)
5360 : 1969	Dimensions for driving tenons
7778 : 1975	Methods for sampling small tools

3 DIMENSIONS

3.1 Shall be as given in Table 1.

3.2 Tolerances

The flute length l_1 and overall length l may vary between the corresponding lengths specified for the preceding and the following ranges of diameters.

Example:

The overall length for 8.10 mm diameter may vary between the values 109 and 125 mm from the specified value of 117 mm.

3.2.1 In case of range of diameters 2.65 to 3, the tolerance on l_1 shall be 33 ± 3 and the tolerance on l shall be 61 ± 4 . In case of range of diameters 19 to 20, the tolerance on l_1 shall be 140 ± 5 and the tolerance on l shall be 205 ± 7 .

4 MATERIAL AND HARDNESS

Shall be in accordance with IS 5099 : 1983.

5 GENERAL REQUIREMENTS

5.1 The drills shall have three flutes.

5.2 'Tool type N' shall be supplied, unless otherwise specified, according to IS 5099 : 1983.

5.3 The drills are normally made without driving tenon. In case required, the dimensions for driving tenon shall be according to IS 5360 : 1969.

5.4 Core Drills for Pre-finishing Operations

When core drills are used for pre-finishing operations, the following amount of stock removal is recommended and the diameters of the core drills shall be calculated accordingly:

All dimensions in millimetres.

Diameter, d		Stock Removal
Over	Up to and including	
—	10	0.20
10	18	0.25
18	20	0.30

NOTE — Observance of this recommendation leads in some cases to the use of special diameters, marked with *asterisks* in Table 1.

5.5 For the requirements not covered in this standard, it shall conform to the requirements of IS 5099 : 1983.

6 SAMPLING

6.1 The sampling and criteria of acceptance shall be in accordance with IS 7778 : 1975.

7 DESIGNATION

7.1 A core drill with parallel shank having $d = 10.00$ mm, made from high speed steel for right hand cutting with 'tool type N' and conforming to this standard shall be designated as:

Core Drill IS 5365 10.00

7.1.1 When a core drill is required with other tool types (H or S) or with a driving tenon (T), this shall be mentioned in the designation as:

Core Drill IS 5365 10.00 S — T

8 MARKING

Shall be as given in IS 5099 : 1983.

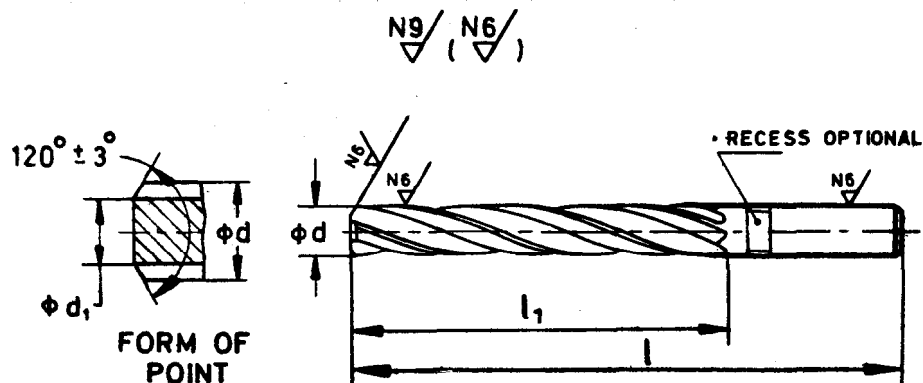
9 PROTECTIVE COATING AND PACKAGING

Shall be as given in IS 5099 : 1983.

Table 1 Dimensions for Core Drills with Parallel Shanks

(Clause 3.1)

All dimensions in millimetres.



$\begin{matrix} d \\ h8 \end{matrix}$		Range of Diameters d		d_1 Approx	l_1	l	Minimum Diameter of Pre-drilled Hole
Choice I	Choice II	Over	Up to and Including				
3.00	—	2.65	3.00	2.0	33	61	2.1
	3.10			2.0			2.2
	3.20	3.00	3.35	2.1	36	65	2.2
3.30				2.1			2.3
	3.40			2.2			2.4
3.50				2.3			2.4
	3.60	3.35	3.75	2.3	39	70	2.5
	3.70			2.4			2.6
3.80				2.5			2.7
	3.90			2.5			2.7
4.00		3.75	4.25	2.6	43	75	2.8
	4.10			2.7			2.9
	4.20			2.7			2.9
4.30				2.8			3.0
	4.40			2.9			3.1
4.50		4.25	4.75	2.9	47	80	3.2
	4.60			3.0			3.2
	4.70			3.0			3.3
4.80				3.1			3.4
	4.90			3.2			3.4
5.00		4.75	5.30	3.2	52	86	3.5
	5.10			3.3			3.6
	5.20			3.4			3.6
	5.30			3.4			3.7
	5.40			3.5			3.8
	5.50			3.6			3.8
	5.60			3.6			3.9
	5.70	5.30	6.00	3.7	57	93	4.0
5.80				3.8			4.1
	5.90			3.8			4.1
6.00				3.9			4.2

Table 1 (Continued)

d h8		Range of Diameters d		d_1 Approx	l_1	l	Minimum Diameter of Pre- drilled Hole
Choice I	Choice II	Over	Up to and Including				
	6.10			4.0			4.3
	6.20			4.0			4.3
	6.30			4.1			4.4
	6.40	6.00	6.70	4.2	63	101	4.5
	6.50			4.2			4.6
	6.60			4.3			4.6
	6.70			4.4			4.7
6.80				4.4			4.8
	6.90			4.5			4.8
7.00				4.6			4.9
	7.10	6.70	7.50	4.6	69	109	5.0
	7.20			4.7			5.0
	7.30			4.7			5.1
	7.40			4.8			5.2
	7.50			4.9			5.2
	7.60			4.9			5.3
	7.70			5.0			5.4
7.80				5.1			5.5
	7.90			5.1			5.5
8.00				5.2			5.6
	8.10	7.50	8.50	5.3	75	117	5.7
	8.20			5.3			5.7
	8.30			5.4			5.8
	8.40			5.5			5.9
	8.50			5.5			6.0
	8.60			5.6			6.0
	8.70			5.7			6.1
8.80				5.7			6.2
	8.90			5.8			6.2
9.00		8.50	9.50	5.8	81	125	6.3
	9.10			5.9			6.4
	9.20			6.0			6.4
	9.30			6.0			6.5
	9.40			6.1			6.6
	9.50			6.2			6.6
	9.60			6.2			6.7
	9.70			6.3			6.8
9.80				6.4			6.9
	9.90			6.4			6.9
10.00				6.5			7.0
	10.10	9.50	10.60	6.6	87	133	7.1
	10.20			6.6			7.1
	10.30			6.7			7.2
	10.40			6.8			7.3
	10.50			6.8			7.4
	10.60			6.9			7.4

Table 1 (Continued)

d h8		Range of Diameters d		d ₁ Approx	l ₁	l	Minimum Diameter of Pre- drilled Hole
Choice I	Choice II	Over	Up to and Including				
10.75*	10.70			7.0			7.5
				7.0			7.5
	10.80			7.0			7.6
11.00	10.90			7.1			7.6
				7.2			7.7
	11.10			7.2			7.8
	11.20			7.3			7.8
	11.30	10.60	11.80	7.3	94	142	7.9
	11.40			7.4			8.0
	11.50			7.5			8.1
	11.60			7.5			8.1
	11.70			7.6			8.2
11.75*				7.6			8.2
	11.80			7.7			8.3
12.00	11.90			7.7			8.3
				7.8			8.4
	12.10			7.9			8.5
	12.20			7.9			8.5
	12.30			8.0			8.6
	12.40			8.1			8.7
	12.50	11.80	13.20	8.1	101	151	8.8
	12.60			8.2			8.8
	12.70			8.3			8.9
12.75*				8.3			8.9
	12.80			8.4			9.0
	12.90			8.4			9.0
13.00				8.5			9.1
	13.10			8.5			9.2
	13.20			8.6			9.2
	13.30			8.6			9.3
	13.40			8.7			9.4
	13.50			8.8			9.4
	13.60			8.8			9.5
	13.70	13.20	14.00	8.9	108	160	9.6
13.75*				8.9			9.6
	13.80			9.0			9.7
	13.90			9.0			9.7
14.00				9.1			9.8
14.75	14.25			9.3			10.0
	14.50			9.4			10.2
		14.00	15.00	9.6	114	169	10.3
15.00				9.8			10.5
15.75	15.25			9.9			10.7
	15.50			10.1			10.8
16.00		15.00	16.00	10.2	120	178	11.0
				10.4			11.2

Table 1 (Concluded)

d_{hg}		Range of Diameters d		d_1 Approx	l_1	l	Minimum Diameter of Pre- drilled Hole
Choice I	Choice II	Over	Up to and Including				
	16.25			10.6			11.4
	16.50			10.7			11.6
16.75		16.00	17.00	10.9	125	184	11.7
17.00				11.1			12.0
	17.25			11.2			12.1
	17.50			11.4	130	191	12.3
17.75		17.00	18.00	11.5			12.4
18.00				11.7			12.6
	18.25			11.9			12.8
	18.50	18.00	19.00	12.0	135	198	12.9
18.70				12.2			13.1
19.00				12.4			13.3
	19.25			12.5			13.4
	19.50	19.00	20.00	12.7	140	*205	13.6
19.70				12.8			13.7
20.00				13.0			13.9

*These diameters are intended to be used only for pre-finishing operations (see 5.4).

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BUREAU OF INDIAN STANDARDS

Headquarters :

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones : 331 01 31, 331 13 75

Telegrams : Manaksanstha
(Common to all Offices)

Regional Offices :

Telephone

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg
NEW DELHI 110002

{ 331 01 31
{ 331 13 75

Eastern : 1/14 C. I. T. Scheme VII M, V. I. P. Road, Maniktola
CALCUTTA 700054

87 86 62

Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036

53 38 43

Southern : C. I. T. Campus, IV Cross Road, MADRAS 600113

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